

**CLAIMS**

- 1           1.     A roof structure comprising:  
2                     a support web;  
3                     an exposure surface perpendicularly bisecting the  
4 support web;  
5                     a collector perpendicularly bisecting the support web  
6 opposite the exposure surface, wherein the collector has flanges projecting  
7 outward in opposing lateral directions, each flange having a distal edge  
8 upwardly extending from the flange.
- 1           2.     The roof structure of claim 1, wherein the exposure surface and  
2 the collector are integral with the support web to eliminate the necessity for  
3 parts inventory.
- 1           3.     The roof structure of claim 2, wherein the distal edge upwardly  
2 extends from each flange at an angle of about 90 to 175 degrees.
- 1           4.     The roof structure of claim 2, wherein the distal edge upwardly  
2 extends from each flange at an angle of about 125 to 145 degrees.
- 1           5.     The roof structure of claim 2, wherein the exposure surface has  
2 a negative angle to the support web.
- 1           6.     The roof structure of claim 2, wherein the collector has a depth  
2 greater than the maximum expected deflection of the roof support.
- 1           7.     The roof structure of claim 2, wherein the distal edge is general  
2 parallel to the support web.
- 1           8.     The roof structure of claim 2, wherein the roof structure is  
2 manufactured by a pultrusion process, extrusion process, weldment process,  
3 rollform process, or a combination thereof.
- 1           9.     A roof panel and roof structure combination comprising:  
2                     at least one roof panel including;

3 an exterior surface; and  
4 an interior surface; and  
5 a roof structure including:  
6 an exposure surface;  
7 a collector including opposing lateral distal edges  
8 that upwardly extend from the collector; and  
9 a support web integral with and perpendicularly  
10 bisecting the exposure surface and the collector, wherein the exposure  
11 surface is opposite the collector; and  
12 wherein the roof panel is closely adjacent to the support  
13 web, and the distal edges of the collector supports the roof panel.

1 10. The combination of claim 9, wherein the roof panel includes a  
2 drip edge extending longitudinally along the interior surface of the roof panel.

1 11. The combination of claim 10, wherein the drip edge extends  
2 parallel with the longitudinal axis of the roof support.

1 12. The combination of claim 9, wherein a first roof panel and a  
2 second roof panel abut opposing sides of the support web, and the exposure  
3 surface of the roof support overlaps the exterior surface of both the first  
4 panel and the second panel.

1 13. The combination of claim 9, wherein the exposure surface of  
2 the roof support includes flanges projecting outward in opposing lateral  
3 directions.

1 14. The combination of claim 13, wherein the exterior surface of  
2 the roof panel includes an arcuate projection and at least one flange of the  
3 exposure surface of the roof support includes an arcuate channel, the arcuate  
4 channel being configured to interface with the arcuate projection of the roof  
5 panel.

1 15. The combination of claim 14, wherein the arcuate channel  
2 extends parallel to the longitudinal axis of the roof support.

1           16.    The combination of claim 9, wherein the roof structure has a  
2   modulus of elasticity of at least about 2,500,000 pounds per square inch.

1           17.    The combination of claim 9, wherein the opposing lateral distal  
2   edges of the collector upwardly extend at an angle from the collector of  
3   about 90 to 175 degrees.

1           18.    A method of making a roof support comprising:  
2                    introducing fibers to a resin bath to form a fiber-resin  
3   combination;  
4                    contouring the fiber-resin combination in the shape of a  
5   roof support; and  
6                    curing the resin-fiber combination.

1           19.    The method of claim 18, wherein the fibers are selected from a  
2   group consisting of at least glass, graphite, polyethylene, polyvinyl and a  
3   combination of the same.

1           20.    The method of claim 18, wherein the resin includes an epoxy  
2   resin.

1           21.    The method of claim 18, wherein the fiber-resin combination is  
2   contoured in the shape of a roof support including:  
3                    a support web;  
4                    an exposure surface perpendicularly bisecting the  
5   support web;  
6                    a collector perpendicularly bisecting the support web  
7   opposite the exposure surface, wherein the collector has flanges projecting  
8   outward in opposing lateral directions, each flange having a distal edge  
9   parallel to the support web and upwardly extending from the flange.

1           22.    The method of claim 18, further comprising cutting the cured  
2   fiber-resin combination.

1           23.    The method of claim 18, wherein the roof support has a  
2   moment of inertia of about 3.180 inches<sup>4</sup>.

1           24.    The method of claim 18, wherein the fiber-resin combination is  
2   in the shape of a roof support including a support web having a top surface  
3   and a bottom surface, wherein the top surface is configured to be closely  
4   adjacent to an interior surface of a roof panel.

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